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(54) Titre : STERILISATEUR «PILLOW FRESH»
(54) Title: PILLOW FRESH

(57) Abrégé/Abstract:
This new germicidal sterilization equipment, with its new dry sterilization and destruction mechanical process, utilizes a very high-intensity germicidal ultra-violet lamp, which will destroy bacteria and micro-organisms left in pillows and bedding after use.

Summary of the Invention PillowFresh –Blankets & Duvets

This new germicidal sterilization equipment, with its new dry sterilization and destruction mechanical process, utilizes a very high-intensity germicidal ultra-violet lamp, which will destroy bacteria and micro-organisms left in pillows and bedding after use.

Summary of the Invention PillowFresh

This new germicidal sterilization equipment, with its new dry sterilization and destruction mechanical process, utilizes a very high-intensity germicidal ultra-violet lamp, which will destroy bacteria and micro-organisms left in pillows and bedding after use.

Underlying Principals

"PillowFresh" with all its parts and integrating components, forms a new unique dry-sterelizing device for the process of destruction of all known micro-organisms and harmful bacteria left in pillows and bedding after use.

Brief Description of all Drawings

Further advantages of this new invention will become apperent from the drawings and descriptions.

Page 1 Figure 1	Computer operational panel to start the machine with ON and OFF buttons, with the number sequence registering each function cycle. Also included are the operator number and company or establishment number where it is used.
Page 1 Figure 1A	Air intake vents to treatment chamber.
Page 1 Figure 2	Safety locks that permit start of the equipment only on closed electrical wiring circuit. The machine can only be started once the safety locks are closed, for the safety and protection of the operator.
Page 1 Figure 3	Self-adjusting IN and OUT air circulation vents.
Page 1 Figure 4	Window of 28" x 38" dimension, of double glazed leaded glass on top of the unit.
Page 1 Figure 5	The treatment unit supported by four wheels with movable rotating two back wheels of the unit that gives the unit necessary maneuverability in corridors and elevators.
Page 2 Figure 1	Two chambers for treatment of the pillows of 18" x 33" x 36" inside dimension.
Page 2 Figure 1A	Air intake vents to treatment chamber, to full of its height.
Page 2 Figure 2	900-1200 RPM electric motor with pressure resistance clutch
Page 2 Figure 3	High-intensity germicidal ultraviolet lamps.
Page 2 Figure 4	Differential gear on the spindle in ratio of 1 to 5 to gear on differential gear on the axle; and gear from the axle gear in ratio of 1 to 5 to the gear of power motor.

Page 2 Figure 5	Duct vents for air circulation in the units to the full height of the unit's inner chamber.
Page 2 Figure 5A	"Emerson-type exhaust motors for air circulation inside the unit.
Page 2 Figure 6	One-way uninterruptedly rotating 4 corner power spindles, constructed according to Möbius strip loop principle that provides force to move the inner treatment chamber's platform in an up and down motion of two to three cycles per minute.
Page 2 Figure 7	Open channels in the walls of the treatment chamber to one-half its height that will allow the lifter on the spindle to uninterruptedly move the floor platform of the chamber up and down for the duration of the operating cycle.
Page 2 Figure 8	Supporting framing structure for inside lining of the treatment chamber.
Page 2 Figure 9	View of assembly corners of treatment chamber for the support of its movable floor.
Page 2 Figure 10	Covering material of perforated stainless steel material of inside of the treatment chamber to permit the circulation of air inside and the penetration of light throughout the inside of the unit.
Page 2 Figure 11,A&B	Secure locking system for the lifter of power spindle to provide level stability for its floor during the operation cycle.
Page 3 Figure 1	Rotating power spindle.
Page 3 Figure 1A	Channels in the rotating power spindle for the runner of the lifter that provides the up and down motion of the unit's floor chamber.
Page 3 Figure 2,5A	Casing around the spindle to protect the treated items in the chamber from "wear and tear" during the operational cycle. Open on outside of the chamber to one-half of its height to provide the runners on the lifter for up and down uninterrupted motion.
Page 3 Figure 3	Lifter on the outside casing of the spindle to move the floor of the chamber up and down.
Page 3 Figure 4	Tension adjuster for the runner in the lifter.

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Page 3 Figure 5	Gear on the spindle in ratio 1 to 5 to the gear of the differential gear. View from outside of the treatment chamber.
Page 3 Figure 5A	View from inside of the treatment chamber.
Page 3 Figure 6	900-1200 RPM electric motor with the pressure resistance clutch with a gear in the ratio of 5 to 1 to the differential gear. Differential gear: see Page 2 Figure 4
Page 3 Figure 7	Assembly sequence of the lifter.
Page 4 Figure 1	2 chambers. See Page 2 Figure 1.
Page 4 Figure 2	4 spindles. See Page 2 Figure 6.
Page 4 Figure 3	The height of 12 inches, that the movable floor in the treatment chamber will move up on the spindles.
Page 4 Figure 4	Movable floor in the treatment chamber.
Page 4 Figure 5	Differential gears. See Page 2 Figure 2.
Page 4 Figure 6	Motor. See Page 2 Figure 2.
Page 4 Figure 7	Loading sequence of pillows to treatment chamber in start-up position, with three wire dividers between the pillows.
Page 4 Figure 8	Position of pillows and separation dividers on top of the lift of the movable treatment chamber floor on spindles, 12 inches up from start of the cycle.
Page 4 Figure 9	Solid construction wire dividers, 3 inches x 16 inches x 28 inches that will permit unobstructed circulation of light and air during treatment cycle.
Page 4 Figure 10	Supported gear bar in ratio 5 to 1 to the gear on the spindle gear. See Page 3 Figure 1, 3 & 5

General Definition

IV

The invention of the PillowFresh appliance is designated for dry sterilization and destruction of all known micro-organisms on pillows, duvets and blankets after usage in homes, hotels, hospitals, airlines and in other establishments using them in operation.

Existing standard procedure is to change only the linen on pillows, blankets and duvets without sterilization of the inner item.

Some hotels and hospitals may have facilities for washing or dry-cleaning linens and bedding, but not facilities for sterilizing the pillows, duvets and blankets themselves.

PillowFresh will provide dry sterilization process for left over bacteria on pillows, blankets and duvets that may have been contaminated by previous occupants of the room. This will provide a more sanitary environment for hotels, hospitals, airplanes and other institutions.

"PillowFresh" with all its parts and integrating components, all of them to required quality standards of the Canadian Standards Association (CSA) and the Underwriters' Laboratory (UL) certifications, will form a new unique dry sterilization device for the process of destruction of all known micro-organisms and harmful bacteria left in bedding blankets & duvets after use. During the treatment cycle in the unit, the treated material is protected from over-exposure to the ultraviolet light by the movement of the movable platform in the unit and constant uninterrupted circulating air. The perforated lining of the treatment chamber keeps the treated items in the chamber from direct contact with the ultra-violet light bulbs.

What is claimed is:

PillowFresh unit, comprising:

1. The germicidal ultraviolet unit with treatment chambers.

2. The treatment unit, supported by four wheels with two moveable back wheels that will permit it maneuverability in corridors and elevators.

3. The door locks with safety connectors that permit the unit to start the sterilization process only with a closed electrical circuit.

4. The unit with its two self adjusting air circulation vent systems.

5. The inside walls of the treatment unit are lined with a stainless steel high gloss embossed surface material to reflect the ultra-violet light and air in all directions in the unit to enhance its circulation and penetration during the treatment process.

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6. The interior walls of the treatment chambers, and inside lining of the unit door that are of high gloss perforated stainless steel material that will permit light and air circulation and penetration in the unit.

7. Rotating in one direction only, the four round spindles of carbon steel alloy material C-1045 will not require lubrication, and will allow the runners in the spindle grooves to move the chamber's treatment floor up and down.

8. The channel grooves on the spindles that are constructed according to the "Möbius strip loop" principle, to a height of 12" on the rotating spindle. This allows uninterrupted up and down motion on them, and lifts the floors in the treatment chambers 12" up from the start of each cycle in the treatment chambers to the maximum height.

9. The stationary casing around the spindle that protects the treated items in the chamber from wear and tear during the operational cycle. Open on the outside of the chamber side to 12" of its height to provide unobstructed movements in the spindles' grooves for uninterrupted up and down motion, to lift the floor of the chamber in the same fashion.

10. The edge on the runners, running in the spindles' grooves in the lifter assembly, that are of the same diameter as the inside diameter of the inside grooves in the spindle.

11. The movable lifter that runs on the outside of the spindle and its casing that locks into a connector in the movable bar.

12. The runner in the lifter assembly unit has a tension adjuster.

13. The treatment unit with an air circulation system with open vents, to the full height of treatment unit, which is constantly forcing and circulating the air and light by the high-intensity germicidal ultra-violet light lamps and through the pillows (2 chambers).

14. The treatment unit with movable platforms in the chambers, that by its upward movement in the chamber compresses the pillows to half of its height, and by its downward movement decompresses the pillows to their original shape. The movement of the platform is constantly keeping the pillows under the pressure of the circulating air and light that has already passed by the high intensity germicidal ultra-violet light lamps. This dry-sterilization process creates the sterilization of the bacteria and any other micro-organisms left in the pillows and bedding after use.

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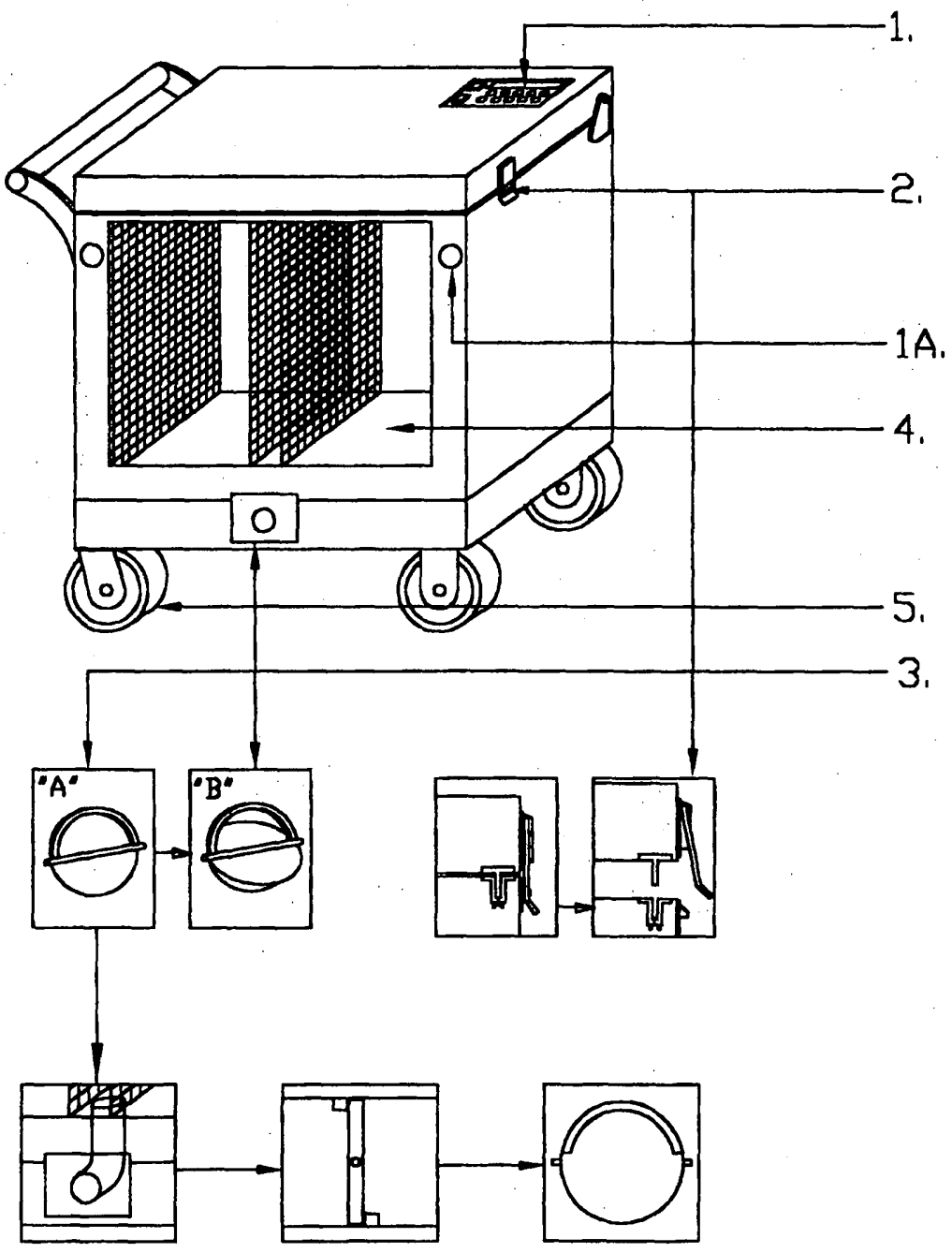

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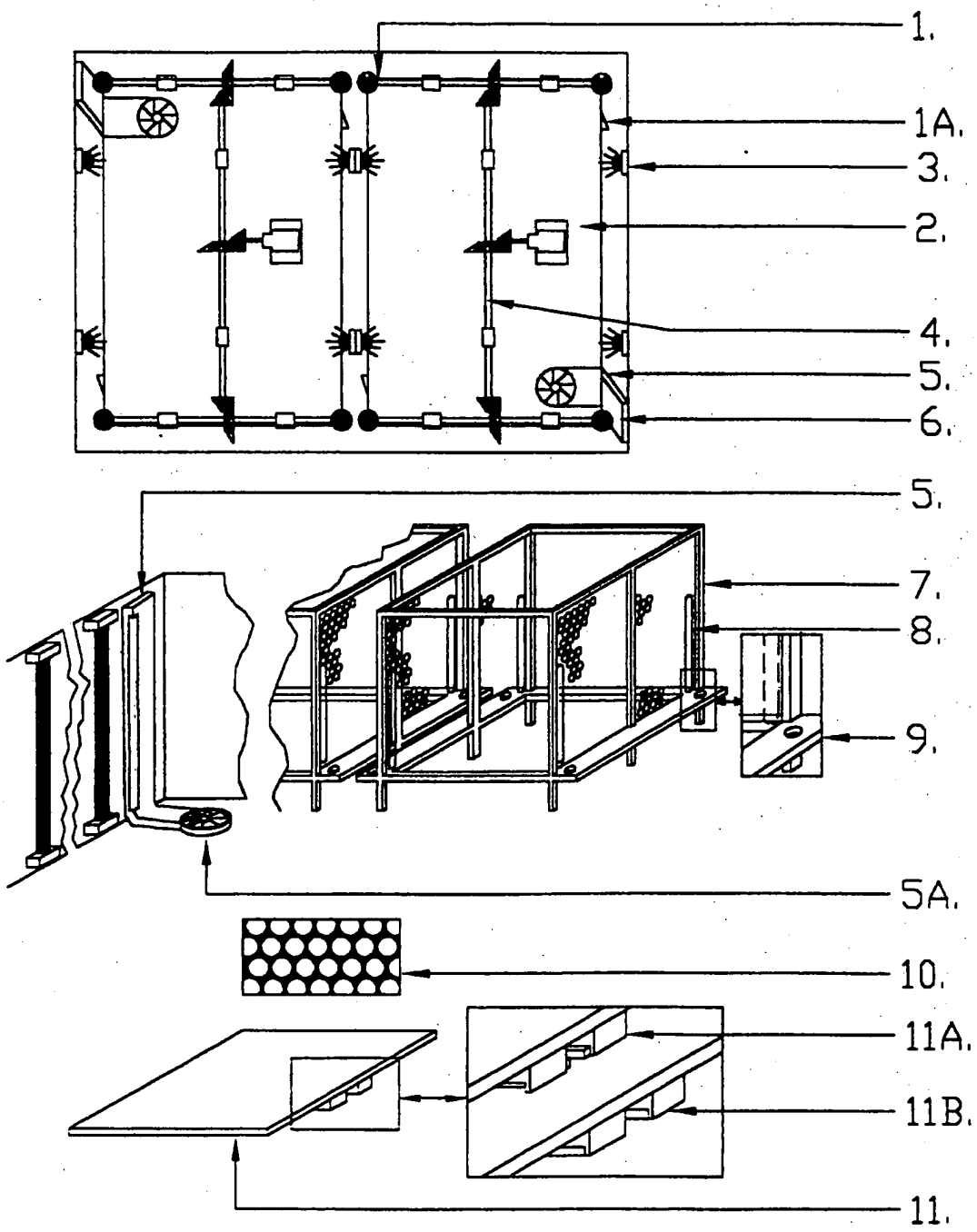

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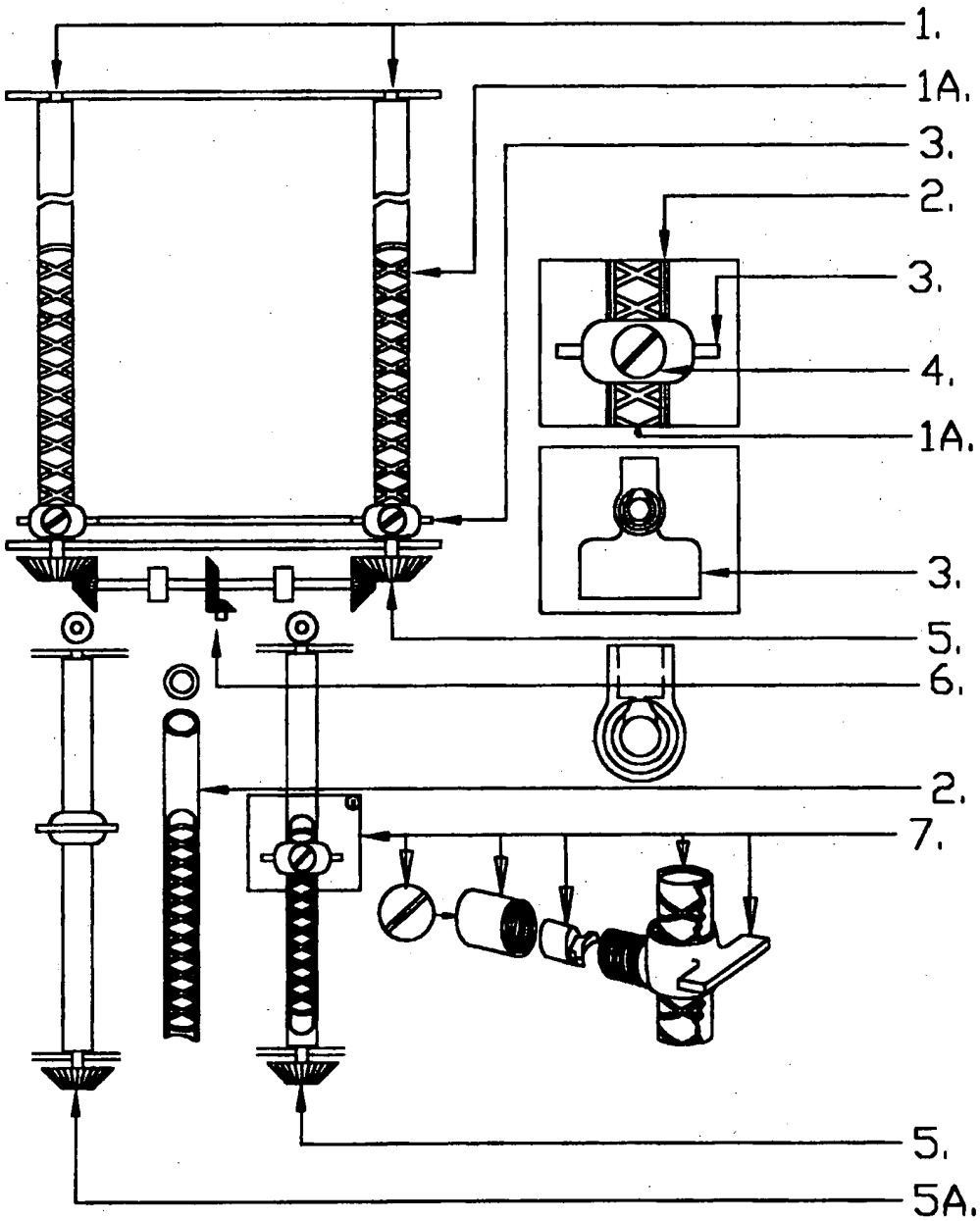

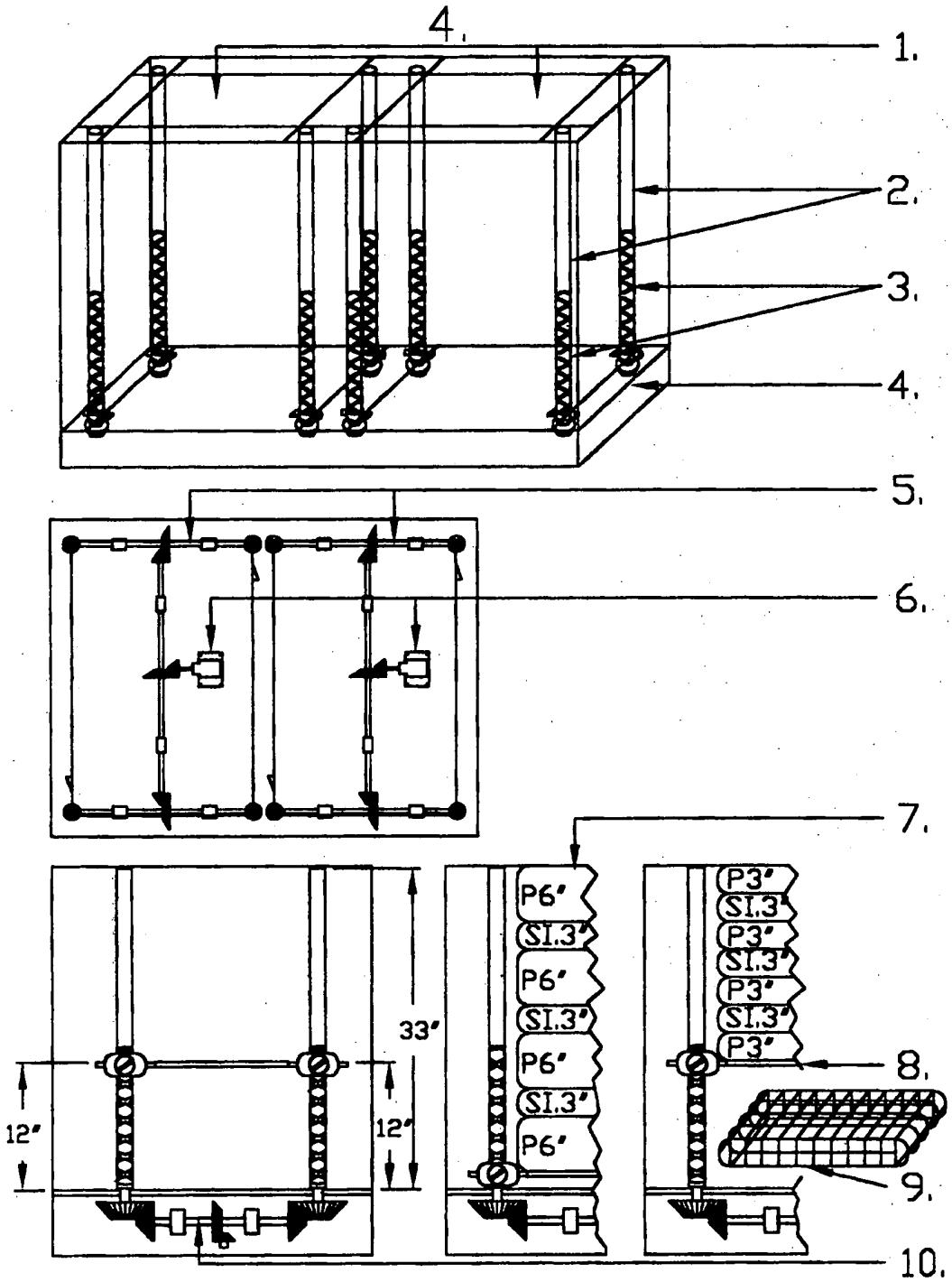
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